

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) B0662.70057

Box No. I TITLE OF INVENTION TUMOR SUPPRESSOR LKB1 KINASE DIRECTLY ACTIVATES AMP-ACTIVATED KINASE	
Box No. II APPLICANT <input type="checkbox"/> This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
BETH ISRAEL DEACONESS MEDICAL CENTER, INC. 330 Brookline Avenue Boston, Massachusetts 02215 United States of America	
State (that is, country) of nationality: US	Telephone No. Facsimile No. Teleprinter No. Applicant's registration No. with the Office
State (that is, country) of residence: US	
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
DANA-FARBER CANCER INSTITUTE, INC. 44 Binney Street Boston, Massachusetts 02115 United States of America	
State (that is, country) of nationality: US	This person is: <input checked="" type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.) Applicant's registration No. with the Office
State (that is, country) of residence: US	
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
VAN AMSTERDAM, John R. Wolf, Greenfield & Sacks, P.C 600 Atlantic Avenue Boston, Massachusetts 02210 United States of America	
Telephone No. 617-646-8000 Facsimile No. 617-646-8646 Teleprinter No.	Agent's registration No. with the Office 40,212
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

CANTLEY, Lewis C.
43 Larch Road
Cambridge, Massachusetts 02138
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

SHAW, Reuben J.
c/o Beth Israel Deaconess Medical Center, Inc.
330 Brookline Avenue, RN-325
Boston, Massachusetts 02215
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

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☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

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BARDEESY, Nabeel
c/o Dana-Farber Cancer Institute, Inc.
44 Binney Street
Boston, Massachusetts 02115
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

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State (that is, country) of residence:

US

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

DEPINHO, Ronald A.
565 Boylston Street
Brookline, Massachusetts 02445
United States of America

This person is:

- ☐ applicant only
☒ applicant and inventor
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box

☐

Further applicants and/or (further) inventors are indicated on another continuation sheet.

Box No. V DESIGNATIONS

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

Box No. VI PRIORITY CLAIM

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 9 September 2003 (09.09.2003)	60/501,513	US		
item (2) 26 September 2003 (26.09.2003)	60/506,705	US		
item (3)				

☐ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☐ all items ☒ item (1) ☒ item (2) ☐ item (3) ☐ other, see Supplemental Box

* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)):

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / US

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year) Number Country (or regional Office)

Box No. VIII DECLARATIONS

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

Number of
declarations

- | | | |
|---|--|---|
| <input type="checkbox"/> Box No. VIII (i) | Declaration as to the identity of the inventor | : |
| <input type="checkbox"/> Box No. VIII (ii) | Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent | : |
| <input type="checkbox"/> Box No. VIII (iii) | Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application | : |
| <input type="checkbox"/> Box No. VIII (iv) | Declaration of inventorship (only for the purposes of the designation of the United States of America) | : |
| <input type="checkbox"/> Box No. VIII (v) | Declaration as to non-prejudicial disclosures or exceptions to lack of novelty | : |

Box No. IX CHECK LIST; LANGUAGE OF FILING																																																							
<p>This international application contains:</p> <p>(a) <input type="checkbox"/> in paper form, the following number of sheets:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">request (including declaration sheets)</td> <td style="text-align: right; padding: 2px;">4</td> </tr> <tr> <td style="padding: 2px;">description (excluding sequence listing and/or tables related thereto)</td> <td style="text-align: right; padding: 2px;">60</td> </tr> <tr> <td style="padding: 2px;">claims</td> <td style="text-align: right; padding: 2px;">8</td> </tr> <tr> <td style="padding: 2px;">abstract</td> <td style="text-align: right; padding: 2px;">1</td> </tr> <tr> <td style="padding: 2px;">drawings</td> <td style="text-align: right; padding: 2px;">10</td> </tr> <tr> <td style="padding: 2px;">Sub-total number of sheets</td> <td style="text-align: right; padding: 2px;">83</td> </tr> <tr> <td style="padding: 2px;">sequence listing</td> <td style="text-align: right; padding: 2px;">2</td> </tr> <tr> <td style="padding: 2px;">tables related thereto</td> <td style="text-align: right; padding: 2px;">0</td> </tr> <tr> <td colspan="2" style="padding: 2px;"><i>(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)</i></td> </tr> <tr> <td style="padding: 2px;">Total number of sheets</td> <td style="text-align: right; padding: 2px;">85</td> </tr> <p>(b) <input type="checkbox"/> only in computer readable form (Section 801(a)(i))</p> <p style="padding-left: 20px;">(i) <input type="checkbox"/> sequence listing</p> <p style="padding-left: 20px;">(ii) <input type="checkbox"/> tables related thereto</p> <p>(c) <input type="checkbox"/> also in computer readable form (Section 801(a)(ii))</p> <p style="padding-left: 20px;">(i) <input type="checkbox"/> sequence listing</p> <p style="padding-left: 20px;">(ii) <input type="checkbox"/> tables related thereto</p> <p>Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the</p> <p><input type="checkbox"/> sequence listing:</p> <p><input type="checkbox"/> tables related thereto:</p> <p><i>(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)</i></p> </table>	request (including declaration sheets)	4	description (excluding sequence listing and/or tables related thereto)	60	claims	8	abstract	1	drawings	10	Sub-total number of sheets	83	sequence listing	2	tables related thereto	0	<i>(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)</i>		Total number of sheets	85	<p>This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">1. <input checked="" type="checkbox"/> fee calculation sheet</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">2. <input type="checkbox"/> original separate power of attorney</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">3. <input type="checkbox"/> original general power of attorney</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">4. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any:</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">5. <input type="checkbox"/> statement explaining lack of signature</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s):</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">7. <input type="checkbox"/> translation of international application into (language):</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">9. <input checked="" type="checkbox"/> sequence listing in computer readable form (indicate type and number of carriers)</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (i) <input checked="" type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application)</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (iii) <input checked="" type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">10. <input type="checkbox"/> tables in computer readable form related to sequence listing (indicate type and number of carriers)</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application)</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (ii) <input type="checkbox"/> (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater)</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;"> (iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column</td> <td style="text-align: right; padding: 2px;">:</td> </tr> <tr> <td style="padding: 2px;">11. <input checked="" type="checkbox"/> other (specify): postcard, transmittal letter</td> <td style="text-align: right; padding: 2px;">:</td> </tr> </table>	1. <input checked="" type="checkbox"/> fee calculation sheet	:	2. <input type="checkbox"/> original separate power of attorney	:	3. <input type="checkbox"/> original general power of attorney	:	4. <input checked="" type="checkbox"/> copy of general power of attorney; 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<p>Figure of the drawings which should accompany the abstract: 4</p>	<p>Language of filing of the international application: ENGLISH</p>																																																						
<p>Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE</p> <p><i>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</i></p> <div style="text-align: center; margin-top: 20px;"> </div> <p style="text-align: center;">VAN AMSTERDAM, John R.</p>																																																							

For receiving Office use only	
<p>1. Date of actual receipt of the purported international application:</p>	<p>2. Drawings:</p> <p><input type="checkbox"/> received:</p>
<p>3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:</p>	<p><input type="checkbox"/> not received:</p>
<p>4. Date of timely receipt of the required corrections under PCT Article 11(2):</p>	<p>6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid</p>
<p>5. International Searching Authority (if two or more are competent): ISA /</p>	

For International Bureau use only
<p>Date of receipt of the record copy by the International Bureau:</p>

This sheet is not part of and does not count as a sheet of the international application.

PCT

FEE CALCULATION SHEET

Annex to the Request

For receiving Office use only

International Application No.

Date stamp of the receiving Office

Applicant's or agent's
file reference B0662.70057

Applicant

BETH ISRAEL DEACONESS MEDICAL CENTER, INC. ET AL.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE \$300.00 [T]

2. SEARCH FEE \$1000.00 [S]

International search to be carried out by US
(If two or more International Searching Authorities are competent to carry out the international search, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FILING FEE

Where items (b) and/or (c) of Box No. IX apply, enter Sub-total number of sheets }
Where items (b) and (c) of Box No. IX do not apply, enter Total number of sheets }

[i1] first 30 sheets \$1134.00 [i1]

[i2] 55 x \$12.00 = \$660.00 [i2]
number of sheets fee per sheet
in excess of 30

[i3] additional component (only if sequence listing and/or tables related thereto are filed in computer readable form under Section 801(a)(i), or both in that form and on paper, under Section 801(a)(ii)):

400 x = [i3]
fee per sheet

Add amounts entered at i1, i2 and i3 and enter total at I \$1794.00 [I]

(Applicants from certain States are entitled to a reduction of 75% of the international filing fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the international filing fee.)

4. FEE FOR PRIORITY DOCUMENT (if applicable) \$40.00 [P]

5. TOTAL FEES PAYABLE \$3134.00
Add amounts entered at T, S, I and P, and enter total in the TOTAL box
TOTAL

MODE OF PAYMENT

☒ authorization to charge deposit account (see below) ☐ postal money order ☐ cash ☐ coupons
☐ cheque ☐ bank draft ☐ revenue stamps ☐ other (specify):

AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT
(This mode of payment may not be available at all receiving Offices)

☒ Authorization to charge the total fees indicated above.
☒ (This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.
☒ Authorization to charge the fee for priority document.

Receiving Office: RO/ US

Deposit Account No.: 23/2825

Date: SEPTEMBER 9, 2004

Name: VAN AMSTERDAM, John R.

Signature: John R. Van Amsterdam